

KUTSEVALOV, V.M.

Relative characteristics and comparative properties of a  
synchronous reactive machine. Elektrичество no.10:52-55 O '62.  
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1. Institut energetiki AN Latviyskoy SSP  
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KUTSEVALOV, V.M., kand. tekhn. nauk

Contactless synchronous motors with low and medium power  
ratings. Elektrichestvo no.11:13-16 N '63.

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1. Institut energetiki AN Latviyskoy SSR.

AFSIT, V.V. [Apsitis, V.], kand. tekhn. nauk., doc. dr.  
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BOOK EXPLOITATION

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Kutsevalov, Vitaliy Mikhaylovich

Synchronous machines with solid poles (Sin-khronnyye mashiny s massivnymi polyusami). Riga, Izd-vo AN LatSSR, 1965. 248 p. illus., biblio. (At head of title: Akademiya nauk Latviyskoy SSSR. Institut energetiki). 2500 copies printed.

TOPIC TAGS: asynchronous electric machine, synchronous electric machine, salient magnetic pole, solid rotor, salient pole solid rotor, shielded rotor, shielded rotor, shielded armature, claw-shaped pole, contactless machine, synchronous electric motor, contactless synchronous electric motor

PURPOSE AND COVERAGE: This book is intended for electrical engineers concerned with the design and operation of synchronous machines. It may also be used by students in technical schools of higher education. The book discusses the results of investigations of equivalent circuits and parameters of synchronous machines with solid poles. Rotors of the standard salient-pole design and complex magnetic circuits with solid inductor segments in contactless synchronous machines are reviewed. Examples of parameter computation using the developed methods and

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their comparison with experimental data are given. The book also includes basic technical data, parameters, and characteristics of contactless synchronous electric motors of the 80 experimental series, developed in the Institute of Power Engineering and Electrical Engineering of the Academy of Sciences Latvian SSR.

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AUTHOR: Kuznetsov, V. K., Mugil'nikov, V.S.

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TITLE: The calculation of the boundary effect in the inductive motors with distributed secondary parameters

SOURCE: AN SSSR. Institut energetiki. Beskontaktnyye elektricheskiye mashiny, no. 4, 1963, 105-160

TOPIC CODES: magnetic domain boundary, boundary value problem, electric motor, induction motor, induction pump, motor efficiency

ABSTRACT: The boundary effects in the inductive motors with distributed rotor parameters (motor with massive ferromagnetic rotor, motor with hollow cylinder rotor, cylindrical screen motor, inductive pump for liquid metals) were considered. In particular, the influence of face sections of the cylindrical rotors, and the rotors extending beyond the stator, on motor efficiency and power loss is analyzed. If the power in the rotor, without taking into account the influence of the rotor faces, is  $P_2$ , then the actual power including the boundary losses is

$$P_{2t} = \frac{1}{\zeta} P_2.$$

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where  $\xi$  is the so-called "boundary coefficient". This coefficient may be found from the expression of Gibbs

$$\xi = 1 + \frac{2}{\pi \Lambda}, \quad (1)$$

where  $\Lambda = L/\tau$  is the relative motor length,  $L$  is the active portion of the total motor (stator) length, and  $\tau$  is the length or the pole section. This expression is valid for the motors in which the rotor extends beyond the stator by an infinitely long margin. For a practical case, where this extension is small

$$\xi = 1 + \frac{\sigma}{\Lambda}, \quad (2)$$

where  $\sigma$  is a function of the relation  $\beta = 2b/\tau$ , in which  $b$  is the length of the rotor protrusion on one side of the stator. A general expression for  $\xi$  is derived for a cylindrical rotor assuming that the axial (normal component of the magnetic field is uniform throughout the length of the sufficiently thin cylinder and that the inductive resistance of the rotor is neglected. Then

$$P_{it} = \left[ 1 - \frac{2}{\pi \Lambda \left( \cosh \frac{\pi \beta}{2} + \sinh \frac{\pi \Lambda}{2} \right)} \right] \frac{\left( B_m \omega \frac{\tau}{\pi} \right)^2}{2 \rho_1} \pi D L \Delta. \quad (3)$$

and

$$P_t = \rho_1 V = \frac{\left( B_m \omega \frac{\tau}{\pi} \right)^2}{2 \rho_1} \pi D L \Delta. \quad (4)$$

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Substituting (3) and (4) in expression defining  $\xi$  in terms of power,

$$\frac{1}{\xi} = \frac{2}{\pi \Lambda \left( \cosh \frac{\pi \rho_1}{2} + \cosh \frac{\pi \rho_2}{2} \right)}, \quad \text{where} \quad \cosh \frac{\rho_1}{\rho_2}.$$
(5)

In this relation the variables are denoted as follows:  $\vec{E}$  is the vector-potential of the electric field,  $\vec{B}$  is the vector of magnetic induction,  $\rho_1$ ,  $\rho_2$  are specific electric resistances of the cylinder material,  $D$  is the cylinder diameter,  $\Lambda$  is the cylinder thickness,  $v$  is the velocity of the magnetic field's motion in relation to the cylinder,  $V$  is the volume of the active portion of the cylinder, and  $\omega$  is the angular frequency of the current in the cylinder. This expression can be simplified for known geometry of the rotor and stator. The specific cases when the rotor length is equal to that of the stator, and several other cases are separately treated and derived from the general expression (5). The following conclusions can be made on the basis of the analysis: 1) the influence of the face (boundary) parts on the value of the efficiency increases with the decreasing motor length; 2) the extension of the rotor beyond stator increases the power losses; 3) the coefficient  $1/\xi$  obtained from the expression (1) represents the mean value of the motor configuration; and 4) the mounting of superconductive rings on both faces of the cylinder makes  $\xi$  equal to 1. An appendix containing the derivation of (3) is included. Orig. art. has: 4 figures, 35 formulas.

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Kutsevalov, Vitaliy Mikhaylovich

Problems of theory and design of induction machines with solid rotors  
(Voprosy teorii i rascheta asinkhronnykh mashin s massivnymi  
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5200 copies printed.

TOPIC TAGS: solid rotor, rotary electric power converter, motor generator, electric generator, induction machine

PURPOSE AND COVERAGE: This book is intended for engineers, technicians, and scientists working in the field of electric machine design. The theory and methods of calculating induction machines with solid rotors are described. Parameter determination methods for shielded machines, equivalent circuits, relative characteristics, and current locii are analyzed. The theory and methods of calculating transients and some problems in designing these machines are given.

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Moskva, Gos.sauuchno-tekhn.izd-vo mashinostroit.lit-ry, 1959.  
104 p. (MIRA 13:4)  
(Tractors--Fuel systems)

SHUBENKO, V.A., doktor tekhn.nauk, prof.; BRASLAVSKIY, I.Ya., inzh.; KUTSIN, V.V.,  
inzh.

High-speed d.c. drive using p-n-p-n devices regulated by a digital  
servo system. Elektrichestvo no.9:31-35 S '65.

(MIRA 18:10)

1. Ural'skiy politekhnicheskiy institut im. Kirova.

L 22427-66 EWT(d)/EMP(v)/EMP(k)/EMP(h)/EMP(l) JJP(c) BG  
ACC NR: AP6013620 SOURCE CODE: UR/0105/65/000/009/0031/0035

AUTHOR: Shubenko, V. A. (Doctor of technical sciences; Professor); Braslavskiy, I. Ya.  
(Engineer); Kutsin, V. V. (Engineer)

ORG: Ural Polytechnic Institute im. Kirov (Ural'skiy politekhnicheskiy institut) 80  
TITLE: High-speed AC thyristor power drive controlled by a digital servosystem 13

SOURCE: Elektrichestvo, no. 9, 1965, 31-35

TOPIC TAGS: digital system, servosystem, alternating current, electric motor,  
automatic control system

ABSTRACT: The authors describe power-drive systems in which the  
motor controls (thyristors) perform the following functions in  
accordance with signals received from the controlling digital  
servosystem: startup of motor in the required direction; reduc-  
tion of motor RPM, disconnection of motor following completion  
of the program. To this end, the digital servosystem (DSS) is  
equipped with an arithmetic device fed with a binary-coded program  
as well as with a nine-digit static-type adder, code-to-voltage  
converters, and transistorized static-type AND, OR, NOT logic  
elements. Experiments demonstrate the feasibility and expedi-  
ency of utilizing thyristors in the power circuits of the induc-  
tion motor, particularly when these are controlled from the DSS.

Card 1/2

UDC: 621.34:62-503.53

L 22427-66

ACC NR: AP6013620

This makes the control system virtually inertia-free and assures the performance of the electric drive in regimes which make possible a rapid and exact execution of the present programs. Orig. art. has: 5 figures and 3 formulas. [JPRS]

SUB CODE: 09 / SUBM DATE: 25May64 / ORIG REF: 006

Card 2/2 *[Signature]*

KUTSIN, Ye.A.

Effect of the electric spark on changes in the microstructure of steel.  
Dep. AN URSR №.1:39-47 '49. (MLRA 9:9)

1 Institut budivel'noi mekhaniki AN URSR. Predstaviv diyseniy chlen AN  
URSR G.V. Kurdyumov.  
(Steel) (Electric spark)

KUTSINA, S., prepodavatel'

Extracurricular work and expansion of political knowledge. Prof.-tekh.  
obr. 18 no. 3:21-22 Mr '61. (MIRA 14:4)  
(Communist education)

KUTSINA, S., prepodavatel'

True art educates. Prof.-tekhn. obr. 20 no.12:23 D '63.  
(MIRA 17:1)  
1. Professional'no-tehnicheskoye uchilishche No.46 g. Moskvy.

REMARKS - ALL INFORMATION

Wardrobe (empty). Bedpost. Bed. Wardrobe (empty).  
(MILAN 1910)

1. Tyukayam (new) bed (initially marked as unclassified).

10121

S/181/62/004/010/009/063  
B108/B186

(See ref. 186)

AUTHOR: Kutsishvili, G. P.

TITLE: The spin structure of the hole levels in the degenerate band and the saturation of cyclotron resonance

PERIODICAL: Fizika tverdogo tela, v. 4, no. 10, 1962, 2708-2713

TEXT: In a magnetic field, the hole levels in the degenerate valency band of germanium are distributed in four groups. In each of these groups the levels corresponding to high quantum numbers are equidistant. The levels corresponding to low quantum numbers are not. This must lead to saturation of cyclotron resonance associated with the transition between two neighboring levels within one group (J. M. Luttinger. Phys. Rev., 102, 1030, 1956). It is shown here that in such a transition the projection of the hole spin on the direction of the external magnetic field changes. The transition probability under the action of a variable electric field (amplitude  $2E_1$ ) of frequency  $\omega_0$  corresponding to the transition is

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S/181/62/004/010/009/063  
The spin structure of the hole levels ... B108/B186

$W(n \leftarrow n+1, \omega_0) = \frac{ceE^2}{hH} (n+1) \Gamma \left( \frac{1}{\tau} - \text{line width} \right)$ . Estimates show easily that the condition  $W \gg \Gamma$  can be fulfilled for germanium. An appreciable redistribution of the level population therefore is possible. On saturation the hole spin changes, and in proportion thereto also the nuclear spin projection. Saturation of a cyclotron transition therefore entails the increase of nuclear resonance which becomes evident if the hole concentration is sufficiently high. There are 2 tables.

ASSOCIATION: Institut fiziki AN Gruz. SSR, Tbilisi (Physics Institute AS GruzSSR, Tbilisi)

SUBMITTED: May 3, 1962

Card 2/2

KUTSIY, Yu., Geroy Sotsialisticheskogo Truda; TIMOFEYEV, M.; KHABAROV, N.,  
Geroy Sotsialisticheskogo Truda Godyayev, A., deputat Verkhovnogo  
Soveta SSSR, tokar'

Toward new creative achievements. Sov. profzoiuzy 17 no.1:8-11 Ja  
'61. (MIRA 14:1)

1. Rukovoditel' brigady kommunisticheskogo truda Kiyevskogo zavoda  
"Krasnyy ekskavator" (for Kutsiy). 2. Chlen komiteta profsoyuza zavoda  
imeni Vladimira Il'icha (for Timofeyev). 3. Brigadir kompleksnoy  
brigady stroiteley Stroitel'no-montazhnogo uchastka No.2 Kuyby-  
shevskogo tresta "Metallurgstroy" (for Khabarov). 4. Sudomekhani-  
cheskiy tsekh zavoda "Krasnoye Sormovo" (for Godyayev).  
(Russia—Economic conditions)

BUDZINSKIY, V.F., inzhener-mayor; KUTSIYAN, V.K., inzhener-kapitan

Loudspeaker communication. Vest. protivovozd. obor. no.5:76-80  
My '61. (MIRA 14:7)  
(Loudspeakers)

LAZAREVA, Ye. N.; BELOZEROVA, O. P.; KUTSKAYA, I. P.; POTRAVNOVA, R. S.; BEREZINA, Ye. K.;  
EYDEL'SNTEYN, S. I.; SAVEL'YEVA, A. M.; RUBTSOVA, L. K.

"New derivatives of antibiotics of the tetracycline series."

report submitted for Antibiotics Cong, Prague, 15-19 Jun 64.

All-Union Res Inst of Antibiotics, Moscow.

KAZAREVA, Ye.N.; KUTSKAYA, I.P.; VAKULENKO, N.A.; PREGOBRAZHENSKAYA, Ye.V.;  
GLAGOVSKAYA, N.S.

Water-soluble erythromycin salt. Antibiotiki 7 no.6:506-510 Je '62.  
(MIRA 15:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut antibiotikov.  
(ERYTHROMYCIN)

VORONOV, Nikolay Mikhaylovich; KUTSKOVICH, I. I., inzhener, redaktor;  
YUDZON, D.M., tekhnicheskiy redaktor

[Locomotive fireman's manual] Rukovodstvo parovoznomu kochegaru.  
Izd. 6-e, perer. Moskva, Gos.transp. zhel-dor.izd-vo, 1955. 146 p.  
(Locomotives) (MLRA 9:3)

KUTSKEVICH, I.I., inzhener; SHIRMAN, A.N., inzhener.

Improving the design of piston rings for locomotives. Zhel.dor.  
transp. 37 no.1:77-79 Ja '56. (MLRA 9:3)  
(Locomotives) (Piston rings)

RAMODIN, V.N., inzh.; KUTSKEVICH, K.I.

Cooperation of industrial enterprises in the organization of loading  
and unloading operations. Trudy TSNII MPS no. 196:45-59 '60.  
(MIRA 14:5)

(Railroads, Industrial) (Loading and unloading)

KUTSKO, B.K., vrach-ftiziatr

Cautery of pleural adhesions under the conditions of antituberculosis  
wards in a district hospital. Zdrav.Bel. 7 no.11:10-11 N '61.  
(MIRA 15:11)

1. Iz Stolinskoy rayonnoy bol'nitsy (glavnny vrach rayona I.A.  
Galinovskiy) Brestskoy oblasti.  
(PNEUMOTHORAX) (ADHESIONS (ANATOMY))

KUTSKO, B.K., vrach-ftiziatr

Pulmonary tuberculosis in elderly persons. Zdrav.Bel. 8 №.5:25-26  
Mv '62. (MIRA 15:10)

1. Iz Stolinskoy rayonnoy bol'nitsy Brestskoy oblasti (glavnnyy  
vrach rayona I.A.Galinovskiy).  
(TUBERCULOSIS)

KUZYUKOVICH, P.M.; KOZINTSEVA, K.Ye.; KUTSKO, B.K.

Pleurectomy in the treatment of tuberculous diseases of the  
pleura. Zdrav.Bel. 8 no.12:8-11 D '62. MIRA 16:1)

1. Iz legochnokhirurgicheskogo otdela (zav. P.M.Kuzyukovich)  
Belorusskogo nauchno-issledovatel'skogo instituta tuberkuleza  
(dir. - kand.med.nauk M.N.Lomako).  
(EMPYEMA) (PLEURA--SURGERY)

"APPROVED FOR RELEASE: 03/13/2001

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APPROVED FOR RELEASE: 03/13/2001 CIA-RDP86-00513R000927920013-8"

S/112/59/000/016/030/054  
A052/A002

9.7910

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 16, p. 150.  
# 34586

AUTHOR: Kutsko, M. Ye.

TITLE: Recording a Control Program on Ferromagnetic Tape With an Allowance  
for the Errors of the Reproducing Device

PERIODICAL: Tr. Leningr. in-t aviat. priborostr., 1958, No. 21, pp. 19-25

TEXT: A method of an automatic allowance for the static,dynamic errors of  
the reproducing device is explained. The method consists in introducing into  
the recording device a certain number of differentiating elements having  
sufficiently low time constants. (See also FZtE, 1959, 34585)

Translator's note: This is the full translation of the original Russian  
abstract.

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9.7910

S/112/59/000/016/029/054  
A052/A002

Translation from: Referativnyy zhurnal, Elektrotehnika, 1959, No. 16, p. 150,  
# 34585

AUTHOR: Kutsko, M. Ye.

TITLE: Reproduction of a Control Program Recording on Ferromagnetic Tape

PERIODICAL: Tr. Leningr. in-t aviat., priborostr., 1958, No. 21, pp. 34-43

TEXT: The proposed method of program control of the angle of turn of an actuating shaft consists in recording the program by means of audio frequency currents on ferromagnetic tape and in reproducing it by an electromechanical servodevice in which the amplitude of recorded signals is used as a control parameter. The reproducing device consists of a reproducing element, preamplifier stage, rectifier-amplifier, balanced amplifier, rotary amplifier and a servomotor connected mechanically to the actuating shaft. The accuracy of performing a given program is controlled by a feedback system, using the angle of turn of the actuating shaft, with the aid of a feedback system by potentiometer connected to the motor shaft. A method of determining the parameters of the reproducing

Card 1/2

S/112/59/000/016/029/0<sup>14</sup>  
A052/A002

Reproduction of a Control Program Recording on Ferromagnetic Tape

device for a given value of the kinetic error ratio to the steady value of the rate of change of the incoming signal is described. There are 3 illustrations (See also RZhE, 1959, 34586).

A. A. S.

Translator's note: This is the full translation of the original Russian abstract.

B

Card 2/2

KONONOV, V.P. (Leningrad); KUTSEK, M.Ye. (Leningrad); LEVIN, V.N.  
(Leningrad); RUBAKOV, V.S. (Leningrad)

Compensation of rotor oscillations of a synchronous motor fed  
from a rectifier converter. Izv. Ak SSSR. Energ. i transp. no.2:  
123-128 Mr-Ap '65.  
(MIRA 18:6)

KHARITONOV, V.P.; KUTSKO, Ye.A., nauchnyy red.; VASIL'YEV, A.V., red.  
izd-va; GURDZHIEVA, A.M., tekhn.red.

[Utilization of secondary power engineering resources in  
industry] Ispol'zovanie vtorichnykh energeticheskikh resursov  
promyshlennosti. Leningrad, Ob-vo po rasprostraneniu polit.  
i nauchn.znanii RSFSR, Leningr.otd-nie, 1959. 28 p.

(MIRA 13:1)

(Power engineering)

SOKOLOV, Georgiy Ivanovich; KUTSKO, Ye.A., nauchn. red.; LAKATSA,  
L.Ya., ved. red.; KHITANENKO, V.I., tekhn. red.

[Arrangement, operation, and repair of the equipment in  
electrically driven gas compressor stations] Ust' ciastvo,  
eksploatatsiya i remont oborudovaniia elektroprivodimoi ga-  
zokompressornoi stantsii. Leningrad, Gantoptekhnizdat,  
1963. 150 p.  
(MIRA 17:1)

(Gas, Natural--Pipelines)  
(Compressors--Electric driving)

KUTSKOV, L.

In hospitable Ghana. Mor. flot 22 no.10:42-43 0 '62.  
(MIRA 15:10)

{Russia—Relations (General) with Ghana)  
(Ghana—Relations (General) with Russia)

KUTSKOV, S., michman

Signalmen are being trained at sea. Starsh.-serzh. no.4:8 Ap  
'62. (MIRA 15:4)  
(Russia--Navy--Signaling)

BIRMAN, Igor' Yakovlevich; KIRIEN, Viktor Isaakovich; MUL'KIN,  
Yed., retsenzient; IGRIVE, A.I., retsenzient; V. V. T.  
Yed., retsenzient; LEBEDEV, G.V., red.

[Methodological instructions on the use of linear programming  
in the determination of optimum networks for transport,  
supply, and distribution in enterprises. Metodicheskie upo-  
znamlia po opredelenii optimálnykh setей po trans-  
zhemlia i razmeshcheniya predpriatii v perekhodnoj sro-  
go programirovaniia. Moscow, "Ekonika", 1971. 128 p.  
i. Moscow. Nauchno-issledovatel'skiy institut stroitel'stva  
stroitel'stva.

KUTSOBIN, Petr Vasil'yevich, zhurnalist-mezhdunarodnik;  
VIDINSKAYA, L., red.; MUKHIN, Yu., tekhn. red.

[Present-day India; distribution of class and political  
forces] Sovremennaia Indiia; rasst'novka klassovykh i o-  
liticheskikh sil. Moskva, Politizdat, 1963. 125 p.

(India--Politics and government) (MIRA 16:12)  
(India--Economic conditions)

PETRUSHOV, A., doktor ekonom.nauk; AFANAS'YEV, L.A., kand.ekonom.nauk;  
DANILEVICH, M.V., kand.ekonom.nauk; LEGLAZAROVA, N.A., kand.ekonom.  
nauk; KOVALEV, Ye.V.; KOL', M.A.; KUZNETSOV, B.P., kand.ekonom.  
nauk; KUTSOBIKA, N.K.; MARTYNOV, V.A., kand.ekonom.nauk; MEH'SHI-  
KOVA, M.A.; NIKITENKO, B.A.; ONUFRYEV, Yu.G.; PROKHOROVA, G.N.;  
RYDVANOV, N.F.; SEGAL', N.M., kand.istor.nauk; UKHOVA, A.M.; FARIZOV,  
I.O., kand.istor.nauk; SHIFRIN, E.L., doktor ekonom.nauk; SHLIKHTER,  
A.A., kand.ekonom.nauk; LISOVSKIY, Yu.P.; MARTYNOV, V.D.; GARSIA, L.,  
red.; MOSKVINA, R., tekhn.red.

[Agriculture of capitalist countries; a statistical manual] Sel'skoe  
khozaiastvo kapitalisticheskikh stran; statisticheskii spravochnik.  
Otvet.red.A.Petrushov. Moskva, Izd-vo sotsial'no-ekon.lit-ry, 1959.  
829 p.  
(MIRA 13:6)

1. Akademiya nauk SSSR. Institut mirovoy ekonomiki i mezhdunarodnykh  
otnosheniy.  
(Agriculture--Statistics)

KUTSOKIN', S.S.

Our experience in the state inspection of collective farm  
machinery. Melk.sil'.hosp. 8 no.9:11-12 S '59.

(MIRA 13:1)

1. Starshiy inzhener-inspektor po gosstekhnadzoru Belotserkovnoy  
remontno tekhnicheskoy stantsii, Kiyevskoy oblasti.  
(Agricultural machinery)

KUTSOV, A.

Machine-tractor stations are building animal shelters on collective farms. Sel'. stroi. 10 no.3:8 Mr '55. (MIRA 8:6)

1. Glavnnyy inzhener Groznenskogo oblastnogo upravleniya po stroytel'stvu v kolkhozakh.  
(Grozny Province--Farm buildings)

KUTSOV, A.

Training specialists for collective farm construction brigades.  
Sel'stroi. 10 no.7:20 J1'55. (MLRA 8:10)  
1. Glavnnyy inzhener Groznetskogo oblastnogo upravleniya po  
stroitel'stvu v kolkhozakh  
(Building--Study and teaching)

KUTSOV, A.

Six hundred sixty foremen have been trained. Sol'. stroi. 13  
no.6;18 Je '58. (MIRA 11:6)  
1.Zaveduyushchiy uchebnoy chast'yu Groznenkoy shkoly stroitel'nykh  
masterov.  
(Grozny--Building trades--Study and teaching)

CHEKMAREV, A.P., akademik; KUTSOV, Ya.O., inzh.

Rolling beams and channels from butt welded blanks. Met. i  
gornerud. prom. no. 6:22-26 N-D '62. (MIRA 17:8)

1. Institut chernoy metallurgii Gosudarstvennogo komiteta  
Soveta Ministrov SSSR po chernoy i tsvetnoy metallurgii.
2. AN UkrSSR (for Chekmarev).

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927920013-8

Instrumental properties and structure of the welds in longitudinal sections of butt-welded blanks. M. A. Gornovik. prep. no. 2;  
44-45-31-A1; 164.

(This is page 1)

• CII (final) for checkmarks.

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927920013-8"

6.6000 (3502,1159)  
9.3140 (2301,1140,1141)

41601

S/180/61/000/001/002/009  
B108/3209

AUTHORS: Kutsova, N. T., Martynov, V. P.

TITLE: Calculation of the parametric amplification on an electron beam with given ejection field

PERIODICAL: Vestnik Moskovskogo universiteta. Seriya 3, fizika, astronomiya, no. 1, 1961, 16-21

TEXT: The interaction of an electron beam, velocity- and density-modulated by a signal of frequency  $\omega$ , with an electric alternating field of frequency  $2\omega$  has been calculated. The problem is first solved without consideration of Coulomb forces. In the range  $x > 0$ , the electric field is given by  $E_y = E_z = 0$ ;  $E_x = E_0 \cos(2\omega t - \beta x)$ . The authors then calculate the first harmonic of the electron current representing the amplified signal of frequency  $\omega$ . The equation of motion for the electron is  $\ddot{x} = \gamma E_0 \cos(2\omega t - \beta x)$  (1) with the initial conditions  $x(t_0) = 0$  (2) and  $i(t_0) = v_0 [1 + v \sin(\omega t_0 + \psi_1)]$  (3), where  $\gamma$  denotes the specific charge,

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S/188/61/000/001/002/009  
B108/B209

Calculation of the parametric...

$v_0 = \sqrt{2qV_0}$  the constant component of the electron velocity,  $V_0$  the accelerating potential, and  $\nu$  a parameter accounting for the velocity modulation of the convection current in the beam. The density  $j$  of this convection current at time  $t$  in the plane  $x$  is determined from the equation of continuity:

$$j(x, t) = j(0, t_0) \frac{dt_0}{dt} + I_0 [1 + \tilde{\nu} \sin(\omega_0 + \varphi_0)] \frac{dt_0}{dt}. \quad (5)$$

(where  $I_0$  denotes the constant portion of  $j$ , and  $\tilde{\nu}$  is a parameter accounting for the density modulation) when writing Eq. (1) in the form  $\ddot{x} = \mu \nu v_0 q \cos(2\omega t - \beta x)$  (4) and expanding the solution in a power series of  $\mu$  and  $\nu$ :  $x = x_0 + \mu x_{1\mu} + \nu x_{1\nu} + \mu^2 x_{2\mu} + \nu^2 x_{2\nu} + \mu \nu x_{2,\mu\nu} + \dots$  (6).

$\mu = \frac{eE_0}{m \cdot v_0^2 Q} \ll 1$ ;  $Q = 1 - \frac{v_0}{v_{mean}}$ . The additional portion of  $j$ , caused by the variable field with  $2\omega$ , is then given by:

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Calculation of the parametric...

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B108/B209

$$\begin{aligned} f(\omega t, x) = & I_0 \left[ \xi \sin \psi_2 + v \varphi_0 \cos \psi_1 - \xi \frac{\mu}{8\rho} A \sin (\psi_2 - 2\psi) + \right. \\ & \left. + \frac{\mu}{8\rho} v \varphi_0 A \cos (\psi_1 - 2\psi) \right] \cos (\omega t - \varphi_0) + I_0 \left[ \xi \cos \psi_2 - v \varphi_0 \sin \psi_1 + \right. \\ & \left. + \frac{\mu}{8\rho} A \cos (\psi_1 - 2\psi) + \frac{\mu}{8\rho} v \varphi_0 A \sin (\psi_1 - 2\psi) \right] \sin (\omega t - \varphi_0), \quad (7) \end{aligned}$$

$A = \sqrt{(\cos 2\Phi_0 - 1)^2 + (2\Phi_0 - \sin 2\Phi_0)^2}$ ,  $2\psi = \arctg \frac{\cos 2\Phi_0 - 1}{2\Phi_0 - \sin 2\Phi_0}$ .  
 where  $\varphi_0 = \frac{x(t, t_0)\omega}{v_0}$  is the absolute, and  $\Phi_0 = qv_0$  the relative angle of electron passage. When the space charge of the electron beam is taken into account, the expression  $\tilde{E}_{k+1} = -\frac{1}{\epsilon_0} \int_j^t j_k(x, t) dt$  (8) is made the starting point of a successive approximation.  $\tilde{E}_{k+1}$  stands for the  $(k+1)$ st approximation of the field of the space charge, and  $j_k$  for the  $k$ -th

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Calculation of the parametric...

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S/188/61/000/001/002/009  
B108/B209

approximation of  $j$ . Introducing Eq. (7) into Eq. (8), one obtains an expression for the electric field, and when the equation of motion is solved therein, the following final expression is obtained for the current density:  $[t]$

$$\tilde{E}_k(t) = -\frac{1}{i_0} \int_{t_0}^t I_k(x, t) dt, \quad (8)$$

$$\begin{aligned}
 I_k(t, x) = & I_0 \cos(\omega t - \varphi_0) \left[ \xi \sin \psi_1 \left( 1 - \frac{\omega_p^2}{\omega^2} \frac{\tau_0^2}{2} \right) + \right. \\
 & + \nu \varphi_0 \frac{\omega}{\omega_p \tau_0} \left( \frac{\omega_p}{\omega} \varphi_0 - \frac{1}{3!} \frac{\omega_p^3}{\omega^3} \varphi_0^3 \right) \cos \psi_1 - \frac{\xi_4}{8\rho} A' \sin(\psi_2 - 2\psi') + \\
 & + \left. \frac{\mu}{8\rho} \nu \varphi_0 A' \cos(\psi_1 - 2\psi') \right] + I_0 \sin(\omega t - \varphi_0) \left[ \xi \cos \psi_1 \left( 1 - \frac{\omega_p^2}{\omega^2} \frac{\tau_0^2}{2} \right) - \right. \\
 & - \nu \varphi_0 \frac{\omega}{\omega_p \tau_0} \left( \frac{\omega_p}{\omega} \varphi_0 - \frac{1}{3!} \frac{\omega_p^3}{\omega^3} \varphi_0^3 \right) \sin \psi_1 + \frac{\xi_4}{8\rho} A' \cos(\psi_2 - 2\psi') + \\
 & \left. + \frac{\mu}{8\rho} \nu \varphi_0 A' \sin(\psi_1 - 2\psi') \right], \quad (10)
 \end{aligned}$$

$$\begin{aligned}
 A' = & \left\{ \left[ \cos 2\Phi_0 \left( 1 + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2} \right) - \left( 1 - \frac{\tau_0^2 \omega_p^2}{2\omega^2} + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2} \right) \right]^2 + \right. \\
 & + \left. \left[ 2\Phi_0 \left( 1 - \frac{\tau_0^2}{6} \frac{\omega_p^2}{\omega^2} + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2} \right) - \sin 2\Phi_0 \cdot \left( 1 + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2} \right) \right]^2 \right\}^{1/2}.
 \end{aligned}$$

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Calculation of the parametric...

S/188/61/000/001/002/009  
B108/B209

$$2\psi' = \operatorname{arctg} \frac{\cos 2\Phi_0 \cdot \left(1 + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2}\right) -}{2\Phi_0 \left(1 - \frac{v_0^2}{6} \frac{\omega_p^2}{\omega^2} + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2}\right) - \\ - \left(1 - \frac{v_0^2}{2} \frac{\omega_p^2}{\omega^2} + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2}\right)} - \sin 2\Phi_0 \left(1 + \frac{1}{4\rho^2} \frac{\omega_p^2}{\omega^2}\right)$$

$\omega_p = \left(\frac{\gamma I_0}{v_0 \epsilon_0}\right)^{1/2}$  denotes the plasma frequency. The authors thank Docent V. M. Lopukhin for discussions. There are 4 figures and 6 references; 3 Soviet-bloc and 3 non-Soviet-bloc. The reference to the English-language publication reads as follows: Louisell W. H., Electronics and Control, 6, no. 1, 1, 1959.

ASSOCIATION: Kafedra radiotekhniki (Department of Radio Engineering)

SUBMITTED: June 11, 1960

Card 5/5

KUTSOVOL, M.S.; SIDOROV, K.V.; NOVIKOVA, F.S., inzh.

Fiftieth anniversary of the "Moskabel'" factory. Vest. elektroprom.  
33 no.3:4-9 Mr '62. (MIRA 15:3)

1. Direktor zavoda "Moskabel'" (for Kutsovola). 2. Glavnnyy inzh.  
zavoda "Moskabel'" (for Sidorov).  
(Electric equipment industry)

KUTSOVSKIY, F. V.

USSR/ Engineering - Metal working

Card 1/1 Pub. 128 - 18/35

Authors : Pal'chev, P. G., and Kutsovskiy, F. V.

Title : Hot extrusion of steel forgings on a crank press

Periodical : Vest. mash. 35/3, 56 - 58, Mar 1955

Abstract : A description is given of the experience of the forge stamping shop of the Kalibr mill, which has introduced mass production by hot extrusion of forgings on crank presses, instead of forging by hammers. The method is found to increase precision of dimensions and to save many operations. Illustrations; diagrams; tables.

Institution : .....

Submitted : .....

KULIKOV, Fedor Andreyevich; KUTSOVSKIY, Filipp Veniaminovich;  
POSTSYNYAK, Ye.Y., inzh., red.; FREGER, D.P., tekhn.red.

[Quickly built protective device for lathes; practices of the  
"Kalibr" Plant in Moscow] Bystrodeistvuiushchee zashchitnoe  
ustroistvo k tokarnym stankam; opyt moskovskogo zavoda "Kalibr."  
Leningrad, 1956. 3 p. (Leningradskii dom nauchno-tehnicheskoi  
propagandy. Informatsionno-tehnicheskii listok, no.2. Moderni-  
zatsiya i remont oborudovaniia) (MIRA 10:12)  
(Lathes)

KUTSEVSKY F V

25(1)

PHASE I BOOK EXPLOITATION

SOV/2290

b 3

Moskovskiy dom nauchno-tekhnicheskoy propagandy imeni F.E. Dzerzhinskogo

Shtampovka vydavlivaniyem; proizvodstvennyy opyt (Impact Extrusion; Industrial Practice) Moscow, 1958. 37 p. (Series: Peredovoy opyt proizvodstva. Seriya "Tekhnologiya mashinostroyeniya," vyp. 8. Obrabotka metallov davleniem) 4,000 copies printed.

Additional Sponsoring Agency: Obshchestvo po rasprastraneniye politicheskikh i nauchnykh znanii RSFSR.

Ed.: A.V. Rebel'skiy; Tech. Ed.: R.A. Sukhareva.

PURPOSE: This booklet is intended for engineers and technicians occupied with problems of die forging, upsetting, and impact extrusion.

COVERAGE: The four articles of the booklet report on experience gained at four plants in the field of impact extrusion. No personalities are mentioned. There are no references.

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Impact Extrusion; Industrial Practice

SOV/2290

## TABLE OF CONTENTS:

Kozlov, I.N. Die Forging and Impact Extrusion From Ball-shaped Blanks  
(Experience of the Pervyy gosudarstvennyy podshipnikovyy zavod [First  
State Bearing Plant]) 3

The advantages of using ball-shaped blanks for impact extrusion  
(hot or cold) of ring-and cup-shaped steel parts are stressed,  
and arrangement of dies, materials used and technique are dis-  
cussed.'

Savin, G.P. Fabrication of Automobile Engine Valves by Direct Impact  
Extrusion With a Single Blow (Experience of the Gor'kiy avtozavod  
[Gor'kiy Automobile Plant]) 19

The technique of the process and the dies and materials used  
are described. The relationship between the speed of the ram  
and the speed of the flow of material is discussed.

Sokolov, N.L. Making Steel forgings by Hot Impact Extrusion  
(Experience of the Moskovskiy zavod malolitrazhnykh avtomobiley  
[Moscow Small Automobile Plant]) 26

The impact extrusion technique for making small, medium, and  
large forgings and the design of dies are described. Sugges-

Card 2/3

Impact Extrusion; Industrial Practice

SOV/2290

tions are made for the further development of the process.

Kutsovskiy, F.V. Hot Impact Extrusion (Experience of the "Kalibr" Plant)

Hot impact extrusion of live center bodies and various types of inserts for gages are described. The use of lubricants is discussed.

33

AVAILABLE: Library of Congress

Card 3/3

GO/bg  
7-10-59

of Gorky, N.I., Arin, I.I., Slobodkin, V., Tikhonov, A.,  
Zelenov, Ivan Grigorovich, L. M., and V. I. Krasik, Entomologists,  
S. S. Leningrad, etc., notably, and.

and the following day the Valsamia were invited to a dinner at the residence of the King.

the (111) face; however, it is not clear if this is due to a difference in the orientation of the crystal or to a difference in the number of dislocations in the crystal. The (111) face has a higher density of dislocations than the (100) face.

and that the need for inference from individual experiments is useful to evaluate the strength of various types of evidence.

The requirements are reduced to 0.1% carbon and 0.03% sulfur by weight, while the silicon and manganese contents are increased from 0.05% to 0.15%.

$$x \in \mathbb{R}^d$$

Planned Period: 1960-70's

Information and activities of Cuban intelligence services and their agents abroad, and the methods used by them for recruitment to espionage operations, including names of individuals retained for espionage operations, names of other, "discretionary" intelligence assets, and information on the location of their principal headquarters; (b) recruitment procedures, including names of persons (other than Cuban intelligence officers) employed in recruiting operations; (c) personnel presented.

END PAGE

РСФСР, г. Калуга, 1958 г.

117-58-7-5/25

AUTHORS: Bukhman, N.A., Candidate of Technical Sciences, and Kutsovskiy, F.V., Engineer,

TITLE: A Semi-Automatic Machine for Butt Welding of Steel Blanks  
(Poluavtomat dlya stykovoy svarki stal'nykh rastekovok)

PERIODICAL: Mashinostroitel', 1958, Nr 7, pp 16-19 (USSR)

ABSTRACT: The head and the bar portions of the vernier calipers "Puteyets" (Figure 1) are produced separately by stamping and are connected by contact butt welding. The article gives detailed information on the design and operation of a semi-automatic machine developed for this purpose by the Welding Laboratory of Vsesoyuznyy nauchno-issledovatel'skiy instrumental'nyy institut (All-Union Scientific Research Institute for Tools) collectively with the plant "Kalibr". The only manual operations are the installing of the blanks on the machine and the removal after welding. The work process itself, consisting of pre-heating, fusion and upsetting, is fully automatic. The machine design is described in detail. The information includes technological recommendations for the rate of feed in separate stages of process as are defined by a curve. The automatic drive of the machine, developed

Card 1/2

A Semi-Automatic Machine for Butt Welding of Steel Blanks 117-58-7-5/25

correspondingly to this curve, is described and illustrated separately. Several thousand vernier caliper blanks have already been joined at the plant "Kalintr" with the use of the described machine and work technology. The quality of the joints is constant and satisfactory. The machine is expected to find extensive use. There are 5 diagrams.

**1. Welding machines--Characteristics**

Card 2/2

"APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927920013-8

KUTSOVSKIY, F.V.; PAL'CHEV, P.G.

Hot sizing of drop forged products. Kuz.-shtam. proizv. 2 no.8:  
7-9 Ag '60.

(Forging)

APPROVED FOR RELEASE: 03/13/2001

CIA-RDP86-00513R000927920013-8"

KUTSOVSKIY, Filipp Veniaminovich; GUROV, S., red.

[Moscow technologists are speaking] Govoriat moskovskie tekhnologи. Moskva, Mosk. rabochiy, 1964. 162 p.  
(MIRA 17:6)

KUTUBIN, N.

Coal Mines and Mining

With the initiators of competition. Mat. uch. 2, No. 1, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

ROZHKOV, I.S.; KUTSUL, V.I.; RAZIN, L.V.; BORISHANSKAYA, S.S.; Iriminal  
uchastiye BOGOMOLOV, M.A.; IMSHENETSIY, A.I., red. izd-va;  
ASTAF'YEVA, G.A., tekhn. red.

[Platinum in the Aldan Shield] Platina Aldanskogo shchita.  
Moskva, Izd-vo Akad. nauk SSSR, 1962. 118 p. (MIKA 15:5)

I. Chlen-korrespondent Akademii nauk SSSR (for Rozhkov).  
(Aldan Plateau--Platinum)

LUTS, Boris Georgiyevich; ROZHKOV, I.S., glav. red.; KUTSUL, V.I.,  
kand. geol.-miner. nauk, otv. red.; SHLEMOV, V.K., red.  
izd-va; KYLINA, Yu.V., tekhn. red.

[Petrology of the granulite facies in the Anabar Massif]  
Petrologia granulitovoi fazy Anabarskogo massiva. Mo-  
skva, Izd-vo "Nauka," 1964. 122 p. (MIRA 17:4)

1. Chlen-korrespondent AN SSSR (for Rozhkov).